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CAPE OF GOOD HOPE
PARLIAMENT
LEGISLATIVE COUNCIL
COMMITTEE ON GUNPOWDER
MAGAZINES
REPORT AND PROCEEDINGS

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CAPE OF GOOD HOPE.

REPORT AND PROCEEDINGS

OF THE

COMMITTEE OF THE LEGISLATIVE COUNCIL

ON

GUNPOWDER MAGAZINES.



Published by order of the Legislative Council.
JULY, 1862.

CAPE TOWN :
SAUL SOLOMON AND CO., STEAM PRINTING OFFICE.
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R E P O R T

OF THE

SELECT COMMITTEE appointed by the **LEGISLATIVE COUNCIL** on the 27th June, 1862, to take into consideration the Return laid on the Table, of the **POWDER MAGAZINES** within the Municipalities of Cape Town and Green Point, and report thereon, with power to call for Papers, Witnesses, and Reports.

COMMITTEE :

Mr. DE WET (Chairman),

Mr. Jarvis,
Mr. Reitz,

Mr. de Roubaix,
Mr. Wicht.

Your committee exceedingly regret that they have again to bring under the notice of this Honourable House the dangerous state in which this town is placed, from having within its precincts several powder magazines, wherein, together, for the last ten years, nearly 300,000 lbs. of gunpowder have been stored. This Council, so far back as the 3rd of June, 1858, by respectful Address, called the attention of his Excellency the then Governor to the alarm which this dangerous nuisance so justly created in the minds of the inhabitants of this town and neighbourhood, and reiterated their grievance on the same subject by Address of 9th July, 1860.

In adverting now to the same subject, your committee beg to submit to the serious consideration of this Honourable Council: That it has been admitted in evidence that the large quantities stored in the military magazines are not exclusively destined to supply the batteries in the bay in case of need, but that a considerable, if not the largest portion, is kept there as a dépôt to supply, when wanted, distant parts of our own as well as other colonies.

That the long period it has remained stored, as far as the dépôt is concerned, abundantly shows that it could have

safely been dispensed with in this town. That, at all events, the danger from the destructive effect of any accidental explosion may, in a great measure, be lessened by apportioning the present large quantities among different smaller magazines, which could be erected for the purpose at no considerable outlay on the part of the Home Government, if some of the present magazines with the valuable ground on which they stand were realized by sale, and the proceeds thereof made available for the construction of new ones.

That your committee is at a loss to conceive why another magazine has not yet been erected in a suitable spot, and at a sufficient distance from town, for and in the place of the large military one near the Military Hospital, which, in consequence of the railroad passing too near to it, has thereby been rendered unserviceable, and necessitated the other magazines being crammed with its contents.

Your committee further submit that from the evidence collected it will appear to this Honourable House that it is very questionable whether the Amsterdam Battery, from being so much exposed to an enemy's fire, would, in time of war, be at all a fit place for storing more gunpowder than would be absolutely required to serve its guns.

That the danger in that locality is daily increasing in consequence of the buildings at the proposed Breakwater closing more and more upon the battery, whilst, on its other side, there are several shipbuilding yards, which, consisting as they do of mere wooden sheds, filled with other combustible matter, would, in case of fire, especially from the violent south-easters prevailing during the summer season, render the situation of the magazines in the battery most perilous.

That it is appalling to think with what an immense loss of life and property an explosion in any one of the magazines would be attended, on account of the large quantity of powder they individually contain ; and although the mother-country, in case of such a calamitous event, might consider it but fair and just (after the repeated warnings the Governor, its representative here on the spot, has received on the subject, but which have hitherto been fruitless and left unheeded) to compensate the inhabitants for the loss of their property, the lives which will thus be lost will remain irreparable.

Finally, your committee beg to observe that they can scarcely find adequate terms to express their astonishment

and disapprobation at the manner in which the magazine containing the gunpowder of the merchants of this town is managed ; nor can they find any valid reason why the traders in this dangerous article should not be forthwith informed that Craig's Tower cannot any longer be tenanted by them for the purpose, and they be called upon to cause a suitable magazine to be built at their own expense, at a distance of at least three miles from town, as also to have it placed under such permanent superintendence and regulations with reference to the storing and delivery of the powder, whereby the lives and property of the inhabitants may not any longer be so wantonly exposed.

J. DE WET, Chairman.

Committee Rooms, 23rd July, 1862.

PROCEEDINGS OF COMMITTEE.

Friday, 4th July, 1862.

PRESENT :

Mr. de Wet,
Mr. Reitz,
Mr. Barry,

Mr. Wicht,
Mr. Jarvis,
Mr. de Roubaix.

Resolved, that Mr. de Wet take the chair.
Order of Council, dated 27th June, for appointment of committee,
read.

Mr. W. G. Boyes examined.

Mr. T. Inglesby examined.

Committee adjourns to Wednesday next, at eleven o'clock, a.m.

Wednesday, 9th July, 1862.

PRESENT :

Mr. de WET (Chairman),

Mr. Reitz,
Mr. Barry,
Mr. Wicht,

Mr. Jarvis,
Mr. de Roubaix.

Colonel Freese, R.A., examined.

Committee adjourns to Tuesday next, at eleven o'clock a.m.

Tuesday, 15th July, 1862.

PRESENT :

Mr. DE WET (Chairman),

Mr. Wicht,

Mr. de Roubaix.

Capt. Tilly, R.E., examined.

Mr. Siems examined.

Committee adjourns to Monday next, at eleven o'clock a.m.

Monday, 21st July, 1862.

PRESENT :

Mr. DE WET (Chairman),

Mr. de Roubaix,

|

Mr. Wicht.

Committee in deliberation.

After deliberation,

Committee adjourns to Wednesday next, at half-past ten o'clock a.m.

Wednesday, 23rd July, 1862.

PRESENT :

Mr. DE WET (Chairman),

Mr. de Roubaix,

Mr. Jarvis,

|

Mr. Reitz,

Mr. Wicht.

Draft Report submitted by the Chairman, agreed to, and the Chairman instructed to report accordingly.



MINUTES OF EVIDENCE.

GUNPOWDER MAGAZINES COMMITTEE.

Friday, 4th July, 1862.

PRESENT :

Mr. DE WET (Chairman),

Mr. Barry,
Mr. Wicht,
Mr. Reitz,

Mr. de Roubaix,
Mr. Jarvis.

Mr. *W. G. Boyes* examined.

1. *Chairman.*] Mr. Boyes, what situation do you hold in the Ordnance Department?—I am in charge of the department at present.

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W. G. Boyes.
4th July, 1862.

2. Then you are acquainted with the different gunpowder magazines in the neighbourhood of Cape Town?—I am.

3. Of what nature are the magazines in the Amsterdam Battery?—There is a small magazine on each side, and one casemate magazine, with three entrances to it.

4. How is the quantity of gunpowder apportioned in the different magazines. Is it equally apportioned?—Some magazines have small-arm ammunition, others gunpowder, others gunpowder done up in cannon cartridges. Most of these, or a great number of these cannon cartridges, are in square cases, with metal lining.

5. Is there any loose powder, not made up into cartridges?—What we call loose powder is powder in barrels, and all these barrels have copper hoops on them. We have a cooper to the department, who goes through the magazine as the barrels require tightening up, or hooping up, so as to keep them perfectly sound, so that the smallest particle of powder could not escape.

6. Are there also any musket cartridges?—Yes, a good number.

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W. G. Boyes.
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7. Can you state to the committee in what proportion the different descriptions stand : what quantity there is of cannon cartridges, what quantity of musket cartridges, and what of loose powder?—Yes, I can furnish the information, if required. They are divided into different magazines.

8. Are there different sorts in different magazines ; or does each magazine contain a quantity of each sort?—Some have gunpowder alone ; and some gun ammunition, which is gunpowder made up as gun ammunition, and also small-arm ammunition.

9. I wish to know the quantity of the different kinds in each magazine. I am under an impression that the loose powder requires more careful management than that already made up in cartridges?—I should like you very much to see these magazines, and the way in which their contents are preserved ; it would satisfy you that there is not the slightest risk or danger to be apprehended.

10. Do you examine these magazines from time to time?—Yes.

11. Are these magazines provided with lightning conductors?—Yes.

12. Are these conductors also examined from time to time, to see that they are in a proper state?—No ; I presume lightning conductors do not require examination.

13. To whom is the report made of the state in which you find the magazine?—To the War Office in England, quarterly ; and once a year each magazine is examined by an officer appointed by the general officer on the station, to examine the contents of the magazine ; and these reports have always been very satisfactory, showing that the inspector has seen no danger to apprehend. Then again there is an officer sent out from England, called the inspector of warlike stores, who has gone through a course of study at Woolwich, and passed an examination ; and he, also, has been through these magazines, and seemed to be perfectly satisfied.

14. Who keeps the keys of these magazines?—I do.

15. Are they kept locked?—Always ; excepting when they are opened for access, or to have the magazines ventilated.

16. And you are responsible, of course, for the use made of these keys?—Yes.

17. When any powder has to be drawn out for the purpose of being given to the troops, for instance, who has

care of it?—It is just given out to the troops who have to be supplied.

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18. But who has the care of the powder after it is taken away?—Those who draw it.

19. Who superintends the delivery of it?—The master artificer; and there is the master cooper, who is the storehouseman of the magazine, so that there are always two superintendents to any issue or receipt of gunpowder.

20. Can you tell the committee what precautions are taken with the magazine in having access to it, or when you approach it, when it is open?—We have always men about there, and no one is allowed to go into the magazine with boots on. The instructions provide that no smoking is allowed; and no one is allowed to come near with any lucifers or combustible article about him, to guard against which we make the men empty their pockets before they go in.

21. Mr. Barry.] Are those regulations strictly adhered to?—Whenever ammunition is drawn by the troops.

22. Chairman.] The powder is sometimes carried through the town, to different places, is it not?—Always under escort.

23. Are the smithies which they have to pass in the streets or elsewhere closed on such occasions?—No.

24. Can you prevent persons from smoking in the streets while the powder is passing?—That is what the escort is for, to see that pipes are taken out of the mouths of persons smoking.

25. Would it not be more safe to ship the powder at the jetty and have it carried across the Bay, than to pass through the town?—No; I do not see any necessity for that.

26. Are you aware what precautions are taken when ammunition is landed by private persons?—I am aware that when merchants land it no precaution is taken at all; but Government ammunition is perfectly safe. The master artificer has frequently seen merchants' ammunition landed on the beach near the Castle, thrown on the sand, and then taken up and carted down to Craig's Tower.

27. Mr. Barry.] The beach was considered the safest place, I presume, to land it at in such cases?—Yes; but they put nothing over to protect it. It is thrown on the sand and taken to the magazines with all that grit about it, from which, of course, there is danger to be apprehended. And then

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there is no precaution taken in private magazines with regard to seeing to the barrels. In this hot country, of course, the barrels will shrink, and consequently powder will escape through the staves. In the Ordnance magazines this is carefully attended to, as I have stated. I would like to invite the members of the committee to visit them, and they would see that they are perfectly safe.

28. *Chairman.*] There are several other magazines; one, I believe, at the Laboratory, near the Kyk in de Pot battery?—That is not a magazine, properly.

29. Is there no powder there?—There may be, but it is in charge of the Royal Artillery.

30. For what purpose?—For the purpose of serving the guns, and of making up cartridges when required.

31. Is the building not of such a nature that it may be used as a magazine?—It has been used for a magazine.

32. Are you aware of its capacity, what quantity it could contain as a magazine, if used?—I am not aware; there was a good quantity there some time ago.

33. Then there is the Mouille magazine; are you aware what quantity that may contain?—Yes; I can tell you what quantity there is in it at present.

34. I have seen that from the return; but may it not contain more?—It may, if you choose to crowd it more than is the custom to do.

35. Now, the magazine close to the town market and the military hospital, what may that contain?—2,400 barrels. A barrel is supposed to contain 100 lbs. of powder, so that the magazine will contain 240,000 lbs.

36. Then there is also another smaller magazine just opposite the hospital, what is its capacity?—That has not been used since my time.

37. I believe it contains all the requisites for a magazine, the doors being copper fastened, &c.?—I am not aware; I never used it.

38. Do you know its capacity?—It is very small, containing 200 barrels.

39. And Craig's Tower, what may that contain?—I am aware that in July, 1852, ten years ago, there was 115,000 lbs. of powder in it, belonging to merchants.

40. Is each of the military magazines provided with a guard?—Yes.

41. And what number have they on the guard?—A

corporal and six men, furnishing a sentry to the Amsterdam and also to the Mouille.

Mr. J.
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42. Are they forbidden to smoke on guard?—When on sentry.

43. And they are allowed to light a fire in winter, and even provided with fuel?—They are.

44. Are you aware of any of the magazines having been struck by lightning?—Not here. On the frontier I recollect, some years ago, I think in 1843, one constructed like the Mouille was struck by lightning, which went in at one side and out at the other, having gone round the magazine.

45. Mr. *de Roubaux*.] At times have not these magazines been left without a guard?—No; whenever there are no soldiers, we are authorized to hire civilians to guard them.

46. Then they have really never been left without a guard?—Never.

47. *Chairman*.] What do you think may be the maximum and minimum consumption per annum of powder contained in all these magazines?—I have no idea.

48. Have you any idea how long this 300,000 lbs. of gunpowder now stored in these magazines may last?—That would depend on the requirements of the service; it is impossible to tell.

49. Does it not strike you that if the Amsterdam Battery were engaged with an enemy, in time of war, it would be in danger, from the quantity of powder stored there?—No; I would have to go there myself.

50. Mr. *Barry*.] Is it bomb-proof?—Yes, all our magazines are bomb-proof, and therefore quite safe.

51. *Chairman*.] Even against the late improvements in artillery?—Yes. I would not hesitate to go out there; I would have no fear on that account.

52. Mr. *Jarvis*.] That I suppose induces you to say that there is no danger to be apprehended?—When I said there was no danger to be apprehended, I meant that there are no loose grains of powder on the floor in our magazines, as is the case in Craig's Tower.

53. Under whose control are the private magazines?—I am not aware.

54. Then we are to understand that the Ordnance department have no control over powder imported by merchants?—None whatever. That is entirely under the control of the Colonial Government.

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55. *Chairman.*] How long has this quantity of gunpowder been lying in the different magazines?—Since I came here; except about 23,000 lbs. which came from Natal.

56. How long is that?—Ten years.

57. *Mr. Barry.*] Do you mean the same powder, or the same quantity?—The same powder.

58. *Mr. Jarvis.*] Was not a large quantity shipped to England?—Not powder, a quantity of small arm ammunition was sent, because the arm had become obsolete. There is always a certain quantity taken for salutes, reviews, and some has been used for volunteering practice, which comes out of our magazines.

59. *Chairman.*] That must amount to some quantity?—About 4,000 lbs. a year, perhaps.

60. Have you observed that the buildings which are rising up in that part of the town encroach more and more on Amsterdam Battery?—Yes; and the town has also advanced upon the magazines. These magazines were built by the Dutch at some distance on each side of the town, and if life and property are in danger at all it entirely arises from the fault of the people who afterwards chose to build there. For instance, if there was a subterranean magazine, and if the ground above it was sold, and a man chose to buy ground there and build upon it, the man who builds runs the risk of being blown up.

61. Do you think that if a fire were to break out, there would not be danger to these magazines in a south-easter?—None whatever; in the case of fire, precautions are always taken.

62. What precautions?—All the entrances to the magazine would be closed up with wet blankets and sand bags.

63. Suppose a fire in the night?—I would have to go, with all the men of my department; we would first go to the store to get blankets, and would take them out wet, so as to be ready. But there is no fear; there is nothing to burn about these magazines, and there are always two doors, an inner and an outer.

64. In the event of an explosion of one magazine, would not the others explode?—They might, but it is not likely. If the Amsterdam exploded I would not be afraid of being in the Mouille. It would be a mere accident that might explode the other.

65. But in the event of an explosion of the Amsterdam

magazine, do you think the magazine in the Mouille would remain standing?—Yes; it is a bomb-proof magazine.

66. Do you think the buildings in the neighbourhood would remain standing?—I dare say they would get a good shake, and some of them, if they got a stone on their top, would be smashed.

67. I believe we have Major du Prat's evidence that not a house would remain standing in Cape Town?—All the ricketty houses would fall down, no doubt.

68. Mr. *Barry*.] Do you not think the explosion of 100,000 lbs of gunpowder would blow down half the houses in Cape Town?—It would shake them down, no doubt.

69. *Chairman*.] Who is the Commander of the Artillery here at present?—Colonel Freeze.

70. Who is the Commander of the Royal Engineers?—Captain Tilley.

71. Mr. *Barry*.] As the town extends in the direction of the different magazines the danger will be increased?—Of course, in their neighbourhood.

72. Do you not think it necessary, for the security of the town, that these magazines should be removed to a greater distance?—They are very convenient to the service where they are at present.

73. I am not referring to the question of convenience, would it not be safer for the town?—No doubt; that speaks for itself.

74. *Chairman*.] Do you think that so great a quantity of gunpowder would be allowed to remain in the city of London?—We have magazines in Hyde Park.

75. What quantity do they contain?—I cannot say; but considerably more than we have here.

76. Do you think there is any powder in the Tower?—There is none in the Tower; but at Tilbury Fort, near Woolwich, there is a large magazine; also at Portsmouth, and in all garrison towns. In some garrison towns they have even magazines under the barracks, and troops living over them. In the Castle we have a magazine under the armoury, but it is not used now.

77. These magazines are built for the express purpose?—Yes.

78. But those casemates at Amsterdam were not built for magazines?—They were converted into bomb-proof magazines in 1842 or 1843.

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79. Mr. *Wicht*.] Have you read the evidence of 1858?—
I did not go through it observantly.

80. It was then stated by the Rev. Mr. Gorrie that a person went into one of these magazines to light his cigar?—I would only say that whoever could have made such an assertion, whether he was a reverend gentleman or not, was mistaken. He could not have meant our magazines. There was a magazine near the military hospital, which was abandoned on account of a brick-kiln being erected near it, and I know that some of the townspeople have occasionally taken a shot at the magazine door, and there such a thing may have happened as a man going in to light his pipe; but it was not used at the time as a magazine. When it was so used there was always a sentry.

81. The man who gave this information was a Mr. Carstens?—Whoever it was, I have no hesitation in saying he was mistaken, if he referred to any of our magazines which were being used at the time.

82. Mr. *Reitz*.] I recollect the committee examining particularly into the matter, but it was impossible to trace what man was on duty that day, or whether he had gone away from his post for a while, perhaps while the room was being ventilated?—The sentry has nothing to do with the ventilating of the magazine. He is to keep people away.

83. I think we had it from the officer of the department that these magazines were from time to time left open for air?—I know that the greatest precautions are taken on these occasions.

84. Mr. *Barry*.] One of the witnesses examined in 1858, Mr. George Pett, the military storekeeper, stated: “It is very necessary, and is often done, to have the magazines opened and aired.” “The doors may on such occasions be left open for an hour, or half a day, but on such occasions the men remain in charge of the magazines, and the greatest caution is used”?—Yes; you cannot ventilate it without the door being open.

85. *Chairman*.] I find from the returns that the Mouille contains 131,00 lbs. Is that in one space, or divided?—There are two apartments, above and below.

86. Then we find that in Amsterdam the quantity was 160,554 lbs.; that, I understand, is divided into three magazines?—Yes; in the casemates and those on the right and left.

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87. Mr. *Jarvis*.] I believe, Mr. Boyes, that all merchants' powder is deposited in Craig's Tower?—Yes.

88. And that is under the supervision of the Colonial Government?—I believe so.

89. Mr. *Reitz*.] How can the committee ascertain what quantity of gunpowder has been taken out of the magazines during the last five or ten years?—I can give a return of the quantity.

90. *Chairman*.] You are acquainted with the return already sent in?—Yes.

91. That contains cartridges, loose powder, and everything?—Yes.

92. Mr. *Wicht*.] Where do you keep the shrapnels and rockets?—In a store of the Mouille magazine.

93. Are they not liable to ignite; in rolling the casks, might you not set them on fire?—They are in boxes.

94. You consider there is no danger?—No.

95. Not by incautious handling?—They are never disturbed, unless wanted.

96. They are charged?—Yes; but securely plugged.

97. *Chairman*.] Does it not strike you that a place could be found in the Cape Flats where a magazine could be erected of sufficient capacity to contain the whole quantity of gunpowder?—Of course, you might build magazines there to any extent.

98. Mr. *Wicht*.] Do you not think, now that the break-water works are in progress, and a large number of men and convicts are employed there, that for their safety the magazines should be removed?—That would be admitting that the magazines are not safe; I maintain that they are perfectly safe.

99. Accidents might happen. Such accidents as the explosion of gunpowder magazines have occurred?—I do not think there is any fear of an accident happening.

100. Have not such accidents occurred as shells exploding in the holds of vessels?—Not that I am aware of. The hundreds of vessels that come out here with ammunition have gone through storms and the lightning has played about them, but no such accident ever occurred. Many of these merchant vessels have not even lightning conductors; but all men-of-war, having ammunition and shells in their holds, are provided with conductors.

101. Do you keep percussion caps in the same magazines?—Yes.

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102. Are they not liable to explode?—Never.

103. Is not the detonating powder more liable to explode than ordinary gunpowder?—Not in a percussion cap. You might pave the yard of the public buildings with them and run over them without danger.

104. Mr. *Barry*.] If you tread on one, is it not sure to go off?—Not Government caps; they are of thicker metal.

105. Mr. *Wicht*.] Do you fill these caps here?—No; they come out filled.

106. But you have materials in the laboratory. Are you aware that there was an explosion in the laboratory some years ago?—I believe a small one occurred.

107. Mr. *de Roubaix*.] From your experience, then, you think it desirable that Government should take some precautionary measures with regard to the mode of landing merchants' gunpowder?—Yes.

108. Is there a man living at Fort Wynyard?—I believe so.

109. Are there precautions taken to prevent fires in the neighbourhood?—Not that I am aware of.

110. The reason I ask the question is, that a Mr. Vos informed me he was almost shot the other day near the Wynyard battery, and there was a fire there?—I believe that place is inhabited by an artilleryman.

111. Mr. *Reitz*.] There is not much ammunition made up now at the laboratory, I believe, but formerly there was a good deal?—Only a small quantity is now made up once a year. Formerly, ammunition was made up for the smooth-bore muskets which were issued for the troops during the war, but that weapon is now obsolete, and the only ammunition made up there now is the cartridges used for the morning and evening gun.

112. Consequently, there was more powder used formerly?—I suppose so.

113. Mr. *de Roubaix*.] And it is your opinion that the attention of the civil authorities should be directed to the careless manner in which merchants' powder is landed?—I am not anxious to give an opinion. My only object is to speak of the Ordnance magazines.

114. But it is very desirable to have your opinion?—I think that precautions should be taken in moving gunpowder through the town. They should, at least, cover it with blankets, to prevent ignition.

115. *Mr. Wicht.*] Do you periodically examine the gunpowder to see that it is in a good state and properly granulated?—The only thing that has been done here was to prove the powder by firing it in a mortar. Anything like damaged gunpowder is sent to England to be re-sifted; nothing of that kind is done here.

116. I understand it is considered that there is something in our atmosphere that tends to increase the strength of gunpowder, the saltpetre imbibing certain gases which render it stronger and makes more frequent inspection necessary?—I am not aware.

117. *Chairman.*] Do you think, if a proper magazine were erected some three or four miles off, in the Flats, the authorities would object to the powder being removed there?—I would rather that some one else answered that question.

118. *Mr. Barry.*] But, as far as you know, there is no objection to moving the ammunition out of town?—It would have to be moved through the town, and it would take a fortnight or a month to do it.

119. *Mr. Wicht.*] Would it not be practicable to carry it by sea, and land it on the other side of the bay?—There is no place to land it.

120. They land private gunpowder on the beach?—It would take a long time to carry thousands and thousands of barrels on men's shoulders.

Mr. T. J. Inglesby examined.

121. *Chairman.*] You had charge of the military magazines formerly?—Under the storekeeper.

122. Who was your successor?—A person named Mr. Corrigan.

123. You are also acquainted with the private magazine at Craig's Tower?—Yes.

124. Who has charge of it at present?—I am not aware.

125. You live not far from Craig's Tower?—About one and a half miles from it; just at the back of the Castle.

126. When any quantity of gunpowder is taken out of Craig's Tower, does it not pass your house?—Yes; it is either landed on the beach or at the south wharf, and as I live behind the Castle, I have a good opportunity of seeing what is done.

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*Mr.
T. J. Inglesby.*

Mr.
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127. Then you have witnessed as well the landing as the carrying of the powder from Craig's Tower to the town?—Both going and coming.

128. The committee would be obliged if you would state whether there is any proper precaution taken on these occasions?—They land it on the beach, and leave it above high-water mark till they load it on wagons, generally with nothing over it. I have seen a sail thrown over, but more frequently there is nothing whatever. It is put on the ground when landed, and, of course, grains of sand adhere to the barrels, so that when they come to be hooped up, danger attends it; it is like striking a flint, ignition is almost sure to follow.

129. And you consider that practice most dangerous?—I do. But I must inform the committee at the same time that merchants' gunpowder is not so dangerous as it was twenty or thirty years ago, because it is now made up in five pound bags; formerly, it came out loose in the barrels. I have myself seen the floor of the magazine in Craig's Tower strewn with loose powder, straw, and sand, and about fifty barrels of gunpowder standing open, one of them immediately inside the outer door,—as I reported at the time, that was in 1852, to the Ordnance storekeeper, by whom I had been sent to make an examination.

130. Would not Craig's Tower do for the military powder as well as the Mouille?—It is much more dangerous than the Mouille; if there were an explosion it would do the town as much damage. Even if this were not the case, it would not do as well for our ammunition, which is packed in bays, so that an inspecting officer at any time may see what number of barrels are in the magazine; and at the same time, the ventilation is better.

131. That cannot be done in Craig's Tower?—It cannot. I went there and could not count the barrels, it is packed in such a way; besides which, it does not contain as much as the Mouille magazine.

132. It is not, then, of sufficient capacity?—Not one fourth.

133. By the careless way this merchants' powder is unloaded on the beach and passed through the town, do you not think that lives and property are in danger?—Undoubtedly. I have been afraid myself when a powder wagon passed me in the street, though I am not one to be easily

alarmed by such things. I have even myself occasionally gone up to gentlemen and asked them to put out their cigars and pipes while the powder was passing.

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134. And there is no constable in charge?—No. At times when the old Road Board used to ship a quantity of powder, Mr. Hemming used to ask for a constable; but with the merchants' powder there is no one in charge but the deliverer.

135. Much of this powder is sent from the magazines to the town to be re-shipped?—A great quantity is sent to Hondeklip Bay and other ports on the coast.

136. Could that powder not be landed and shipped on the other side of the bay?—The surf is often so strong that the men would do it at the risk of their lives; and on account of the uncertainty of the weather, there would be great delay if they had to wait.

137. Could the powder not remain in the vessel until the weather was suitable for landing?—Then they would have to wait sometimes five or six weeks; and all that time, by Act of Parliament, nothing could be delivered out of the ship's hold till the powder was out.

138. Have you had occasion to examine closely the magazines built by the old East India Company at the Mouille and near to the market?—Yes; there are no magazines but those built by the old Dutch East India Company.

139. How are they constructed,—substantially?—They are not to be equalled in the colony. Such materials are not now to be had; small Dutch klinkers.

140. Then those materials are very valuable?—No; not worth taking down now. When the east magazine near the market was reported to be dangerous some time ago, and the powder removed, the building was put up for tender, and Mr. Thalwitzer tendered to take it down for £10; which clearly shows that the labour in taking it down was more than it was worth.

141. Have you any idea of the cost of building magazines of sufficient capacity, one for a private magazine, and the other for Government, of the best materials, and at a distance of three or four miles away, on the Flats?—Of the same materials and capacity I should say about £20,000.

142. Have you any idea how much the present magazines might be sold for, in the event of other magazines being built?—I should value the east magazine at not more than

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from £200 to £400; you cannot value the ground at much, for it is only about 196 feet long by 100 or so in breadth.

143. Suppose the authorities were to part with that magazine and allow the purchaser to use it as a store, do you not think it would be worth upwards of £1,000?—No; it is so constructed that the space within is small; the walls are four feet thick. It would cost too much money to alter them to make them available.

144. But it is a good-sized building; do you not think that it would fetch £1,000?—No, I do not think that any man at present would give £1,000.

145. Not even for the Mouille magazine?—It would bring near £2,000 if you include the ground the Government claims as a reserve.

146. I had an opinion that the other would be more valuable?—No; it is small, and does not come up to the road; besides which it is cut off by the railroad on one side.

147. Have you an idea of the quantity contained by the east magazine, the one Mr. Thalwitzer made a tender for?—2,029 barrels when filled. It is larger by 600 barrels than the Mouille.

148. What quantity does a common wagon-load contain?—We never put more than 16 barrels; that is 1,600 lbs.

149. You stated that two proper magazines could not be built for less than £20,000?—Yes; that is bomb proof, efficient magazines.

150. Would it be necessary to build them bomb proof at such a distance from the town as is proposed?—That depends on the guns an enemy employed.

151. But could not you build where no gun could reach?—Yes; I think you could, if distance from town were no objection.

152. Suppose the Government were to send out labourers and artizans from England, would not the expense be less?—If military labour was employed it might be cheaper; but the materials are very expensive. The fastenings, locks, and hinges, such as are used, could not be obtained in Cape Town; and the outsides of the doors are all covered with copper. With the exception of these, you could get in town all that would be wanted.

153. Mr. Barry.] You are of opinion that the same precautions are not taken at the private magazine as at the

military?—The party in charge has not the appliances and the means; and he is not supervised, as is the custom in our department. I submit the report I made to the Ordnance storekeeper when I inspected that magazine. It is as follows:

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Ordnance Workshops, Cape Town, July, 1852.

ROBT. COOPER, Esq., Ordnance Storekeeper.

SIR,—Agreeably to your directions, I this day proceeded to ascertain the quantity of merchants' gunpowder deposited in Craig's Tower.

And first, I respectfully beg to observe that, on account of its crowded state, and the manner in which the barrels are stowed, I found it impossible to perform that service without the aid of labourers to remove them.

Secondly, I consider it my duty to report the very dangerous condition in which the magazine was found, the floors being strewn with *loose powder*, straw, and sand; about fifty barrels of gunpowder were open, one of which is standing immediately inside the outer door of the magazine, which door has several air-holes, and perforations made by *bullets*, I found, also, several barrels stacked on a door which had been taken off its hinges, which hinges and lock are of *iron*; I also found the accompanying part of a *falling axe* inside the magazine, laying alongside the *barrels*. Grass is growing under the outer door, which is of *iron*, and insecure, being only fastened by a slight iron padlock. Altogether, the great quantity of iron-work renders the magazine highly dangerous.

I beg leave to enclose a return of the gunpowder supposed to be stowed in the magazine, taken from the storekeeper's books, which may account for the discrepancies in the former return and the statement made by the merchants of Cape Town.

I have, &c.,

THOS. INGLESBY, Master Artificer.

Powder in Craig's Tower, furnished by storekeeper:

R. Clement	...	...	...	9,491 pounds.
J. G. Richter	...	...	..	9,900 "
E. Landsberg	...	...	...	21,020 "
B. J. Foord	...	...	...	7,950 "
Deane & Johnson	...	...	...	13,425 "
A. Taylor	...	...	...	13,275 "
B. Daneel	...	...	...	10,525 "
P. Botha	...	...	...	2,900 "
E. Hanbury	..	...	...	6,600 "
J. Robertson & Co	...	...	...	11,100 "
Van der Byl & Co	7,871 "
H. M. Customs	1,000 "

Total	115,057	"
In Amsterdam Magazine	48,250	"

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154. *Chairman.*] What would be the effect if, unfortunately, an explosion were to take place in any of these magazines?—I should not like to be in any house in Cape Town. I think that one magazine might blow up without disturbing the other; but that is a thing that has never been proved. An explosion of one might blow down or shake the other, but I do not think it would ignite the powder contained in that other.

155. But with respect to the town?—It would shake every house in town. And there is another thing I would mention: the Harbour Board has an immense quantity of gunpowder just on the other side of the Mouille magazine. It is in a place with a little stone wall round it, and no sentry. I have passed it frequently, by day and night, and never saw any guard about it. I may state that in 1842 I went out to a spot close to the Salt River, to mark out a place to erect a magazine, before the powder was removed to Amsterdam; and the merchants would not agree to it; it would cost too much money. Colonel Lewis was the officer who went out for the purpose.

156. And what was the estimate?—I do not know. It was framed by the Engineer Department.

157. Is there any way of ascertaining?—Captain Tilley may give you information with regard to the expense of constructing; his estimate may be much less than mine.

158. What distance is Craig's Tower from the Town-house?—About two miles.

159. Mr. *Barry.*] To whom does it belong?—To the Ordnance Department. It is let for £12 a year, nominal rent. Formerly the merchants paid a shilling a barrel for placing the powder in our store. Every tool in the Ordnance magazine is made of copper; not a particle of iron is used of any description. In the private powder magazine there is no precaution taken; on one occasion the head of a felling axe was used to open the barrels with.

160. Do you think that the present magazines, and the land surrounding them, or belonging thereto, would not sell for sufficient to erect efficient magazines in another locality?—Not one fourth of the expense. That is my opinion.

Wednesday, 9th July, 1862.

PRESENT :

Mr DE WET (Chairman).

Mr. Reitz,
Mr. Barry,
Mr. Jarvis,

Mr. Wicht,
Mr. de Roubaix.

Colonel Freese, R.A., Commandant of the Western Districts,
examined.

161. *Chairman.*] Are you acquainted with the quantity of gunpowder in the different magazines in the neighbourhood of Cape Town?—I have not the information with me at present, but could easily obtain it. I know, however, that every magazine is full.

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162. Have you seen the return I hold in my hand forwarded by Government?—Yes; it bears my signature, and will tell you what the exact quantity is.

163. What is your opinion in respect to that quantity: is it not extraordinarily large?—It is not half the quantity we shall have in a very short time. My orders are to keep 225 rounds for every gun mounted in the place. This is to be in my own charge, irrespective of what may be under the military storekeeper's control.

164. What is your opinion as to the localities in which this gunpowder is stored?—Originally, when the magazines were built, they were safe in every way; and at present I do not see any danger to apprehend, except from the houses being built in their neighbourhood. Of course it will be unsafe for the houses; but these magazines, first of all, were put up in what was a perfectly safe place.

165. In the event of your being consulted by Government as to the erection of magazines, supposing those you now have were not in existence, would you select such spots as the present as being the most eligible for the purpose?—Several considerations would have to guide one in the choice of a spot. Firstly, the magazine must be placed under cover, and as close as possible to the work which it has to supply with powder. When the Green Point magazines were built, they were completely under cover of the Chavonne and Amsterdam; so that at that time the authorities could not have chosen a better place.

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166. But would these spots be those you would select for erecting magazines supposing we had none?—Decidedly not, under present circumstances, surrounded as the locality is by houses. These are matters in which we must be guided by circumstances entirely.

167. In the event of an explosion taking place, what effect would it have upon the town?—The effect it would have would depend upon the vein of wind blowing. If the Mouille magazine went, it would certainly lay half Green Point in ashes, if indeed it had not more effect, which, as I said, would depend upon the vein of wind.

168. And what would be the effect in case of an explosion of the Amsterdam?—That being still more this way, the effect on the town would of course be greater. When you come to consider 160,000lbs. of gunpowder blowing up, you may form some idea of the probable damage. You may calculate that perhaps the force of the blow up would be that of two thirds of the powder; one third of it would be wasted by the explosion, which would be so sudden as not to allow of its forming into gas. The effect of the remaining two thirds would be no slight thing,—it would shake your town down pretty handsomely.

169. What do you mean by shaking the town,—that it would not continue to stand?—By shaking, I mean that it would bring your town down with a rattle, or a good part of it. Suppose there was a vein of wind blowing from the Amsterdam toward the castle, a north-wester, say, having to cross the bay before it would reach this part of the town, it would not do so much harm as if a land wind were prevailing, because water is a great deadner of explosive powers. Having to cross the harbour, therefore, you would not feel it half so much; but of course it would nevertheless be a calamity attended with dreadful loss of life. Still, as long as you have works for your harbour defence, you must keep a certain quantity of powder in these magazines.

170. Do you not think it desirable to apportion the present large quantity of gunpowder amongst different magazines, so as to reduce the effects of any probable accident to one?—Decidedly. I agree that you ought not to have too much powder together if you have the means of separating it.

171. Are these quantities not far beyond what the different batteries require for their immediate use?—Certainly; but then it must be remembered that we have the dépôt here for

the supply of the Eastern Province also. We are obliged to keep a supply, not only for our own people—that is, for the consumption of the country itself; but for the naval power as well: and when Simon's Bay is full, we store up here for the navy. At present we are full in every hole and corner. We were better distributed a little while ago; but the railroad ran so close to the large magazine, near the hospital, that it was in danger from sparks, and had to be emptied.

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172. Would it not be desirable to erect some other magazine in lieu of the one of which you have been deprived?—I believe that the Railway Company is to erect a magazine instead of that.

173. Are you aware what spot is to be selected for the purpose?—I am not aware. When I was down here before there was a spot proposed at Green Point, under the crest of the hill, and entirely away from all houses. I may mention that another point for consideration in the erection of a magazine is, that it must be easy of access, and must be well covered, so as to allow of its being well defended. You could not put a magazine, for instance, on the top of the flag-staff hill, or anywhere up there, for you could not defend it: it would be quite exposed to an enemy, who might lay down in the harbour and shell it with ease. I hold that any place to which you can throw a shell is not safe; for, give me a spot of only nine feet square, where I can place a mortar, and I will bring you out of any place that a shell can get in to. A magazine must be placed in a position so that it can be efficiently protected, and, at the same time, where it would not be seen by an enemy from the sea.

174. Mr. *Reitz*.] If the legislature were to recommend the removal of the powder magazines for the safety of the town, could they be constructed near Cape Town, so as to be sufficiently safe from an enemy in time of war?—Certainly. Your main depôt might be away some distance under cover; but you must have a certain proportion of powder near at hand: and my orders are, as I stated, to keep 225 rounds for every gun in the battery close at hand, and ready for active service. Either the harbour is to be defended, or it is not; and if you look to us to defend your harbour we must have that quantity of gunpowder, which a very high parliamentary committee that recently sat at home has laid down, must be kept in every battery ready at hand.

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175 What quantity of powder do you require for each gun?—It depends upon the size of the gun. When you know that, it is a simple matter of calculation. An iron shot, for instance, takes one third of its weight in powder; a brass shot, one fourth. If you know the weight of your shot, divide it by three or four, for iron and brass respectively. That would give you—for an 18-pounder, 6lbs. of powder necessary, and for a 24-pounder, 8lbs., and so on. Taking 225 rounds to each gun you would require nearly 2,000lbs. of ammunition for it.

176. How many guns have you?—On the Imhoff we have 25 or 26. And then we have also larger guns, requiring a proportionately larger quantity; for a 32-pounder would take 10lbs. of gunpowder, which would make 2,250lbs for each gun.

177. Mr. Wicht.] And you have 68-pounders mounted also?—Yes; and they again would require a still larger quantity; so that it is absolutely necessary, according to my instructions, that this powder should come into the country to complete my supply up to what in future will be required. This will be in my own possession, to say nothing of what the storekeeper will have. I will store this as my own property, with which no one else can interfere.

178. Mr. Jarvis.] Are the existing batteries protected from bombardment by their position?—Well, you have opened us on the flank to a certain degree by taking away the Chavonne, though the houses built about in that locality, may in some measure cover us. At the same time, however, you must remember that in case of any disturbance with a foreign power, everything within 600 yards of the fort must come down, houses included if there are any built there.

179. Mr. Wicht.] And in consequence of the harbour works safety has decreased?—Decidedly; the harbour works and railroad have done much towards that. Every magazine now contains quite as much as there is accommodation for; and I have recently been obliged to bring a good deal more into the Imhoff from Fort Knokke, which was flooded, part of it coming down by the run. A large store for gunpowder that we have is in the possession of private parties.

180. Mr. Jarvis.] Where the merchants' powder is placed?—Yes; but the cause of the pressure at the present moment is the railroad, which took away one of our main magazines.

181. *Chairman.*] Are you aware of its capacity?—I dare say it would contain 2,000 barrels with 100 lbs. each. Col. Freese,
R.A.

182. You are aware that an explosion took place a considerable time ago at Mayence, in France?—Yes. 9th July, 1862.

183. Do you know what quantity of gunpowder was contained in the magazine there?—No, I could not say; but I can answer for the effects of one of the main magazines in Sebastopol, which contained upwards of 80,000 lbs., when it blew up; it destroyed the whole side of the town.

184. Are you aware of any instance in which such a great quantity of gunpowder has been kept so close to a town; in places, I mean, which are not strictly fortresses, such as Mayence and Strasburg?—The main depôt in England is near a town, but then it is enclosed with a wall; and there are several places in which a great quantity of gunpowder is stored in the neighbourhood of towns, which are not affected, although constant accidents happen.

185. Besides the considerations you have stated, guiding the erection of magazines, is there not a certain rule which provides that they shall be a certain distance from a town?—You generally place the magazine as close to your works as possible, so as not to expose the men more than is required in fetching the powder for service. Your main magazine is never opened except upon emergencies, for we have what we call expense magazines for immediate use. The main magazine or depôt might be in the vicinity of your fortress, but still you must have it as close as possible.

186. In the event of the town being bombarded, could Amsterdam Battery make any effectual resistance?—An enemy on coming round the light-house would first be played upon by the Kyk-in-de-Pot, or Wynyard Battery, which reaches two thirds across the bay. Then they would have to pass the Amsterdam; but if they are once beyond that, you may whistle for your town. An enemy passed the Amsterdam would soon lay you under contribution; and in fact, the shortest way would be to come to terms with him.

187. *Mr. Barry.*] How about the Castle?—The Castle is like a bit of paper; though it is necessary to retain it for a certain reason; and that is why I disapproved of giving up the Castle to the Railway Company. They wanted to take the Castle and leave the Imhof; but the fact is that there is such a large gorge there that it would be impossible to

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defend it if you took away the Castle. If an enemy landed about there, the Castle would be a certain place where you could hold out for a time. It is much better always, under such circumstances, to have a place to which you can retire and say you will not give it up at the present moment; and although a few rounds might bring it down, the enemy would not be supposed to know that. For my own part, I do not think the Castle would stand a round of firing before it came down. All the upper part, made of brick work, is so soft that it would easily be perforated.

188. Mr. *Reitz*.] As this evidence will be published, I wish to ask whether you have any objection to what you have just stated appearing in print?—Not the slightest.

189. Mr. *Barry*.] Then, under the circumstances stated by you, it would be better to take down the Castle at once?—It affords a certain amount of defence against a land force, as I have just explained. The only chance we would have against a man of war would be to bring all our guns to bear upon her at a certain point. If we did not then cripple her at the first round no battery could stand the effects of her fire; because where we could put five shots they could put fifteen, and adding to this the weight of metal, it is clear that nothing could stand it.

190. *Chairman*.] Under such circumstances, in case the town were bombarded, we would be in immediate danger from the explosion of these magazines?—If the magazines exploded, certainly there would be danger, because at Green Point also there are houses all round about, particularly those connected with the harbour and breakwater works.

191. Are you aware how long the present quantity of powder has been lying in these magazines?—I cannot tell; because I have only been four years in the colony, and my service has been chiefly on the frontier.

192. We have it in evidence that the powder has been in these magazines for ten years; does not that show that it is not much wanted?—But suppose a Kafir war arose, if we do not keep a proper supply store here, where are you to get it when you are in a hurry for it. It is of no use shutting the door after your horse is gone; you must keep things ready.

193. Is it not far better that magazines should be erected on the frontier, on a safe spot, at Port Elizabeth, or wherever else required?—I do not think Government would go to the expense of doing it. I am not certain of that, of

course; it would rest with the Government, to whom representations would have to be made.

194. Mr. *Barry*.] In your opinion, is it advisable that the Government should go to the expense?—Only for this reason that you ought not to keep such large quantities of powder together.

195. Then you would reduce the quantity in the vicinity of the town?—Yes, if possible.

196. *Chairman*.] Have you any idea what the erection of suitable magazines would cost?—That is an engineering question entirely.

197. Although the powder has been here so long a time, it is still as good as ever?—Yes; it is rolled and proved every year, and if it is found bad it is sent home.

198. Then, if any objection on the score of expense were removed, and Government felt inclined to sell this powder, there is reason to suppose that it would fetch as high a price here as the powder ordinarily imported?—Certainly; because a great quantity of Government powder is made by the same persons who supply private people. The Government manufacturers cannot make sufficient, and Curtis and Harvey, for instance, and such firms as that, supply the Government with just the same fine-grained powder as they sell to private individuals.

199. There is a small magazine, I believe, opposite the military hospital?—That is entirely done away with now as a magazine, and is used for a store-place to the hospital.

200. But could it not be put in proper repair, if necessary?—No; you would have to pull it down, for the roof is gone entirely.

201. In the event of the merchants building themselves a private magazine, could Craig's Tower serve as a magazine for military gunpowder?—There are objections, one of the principal of which is its distance from town. You would have to build a guard-house, and there would be a heavy expense attending the fitting-up. Besides, it is not intended as a depôt for powder, but for a gun on the top to aid in the defence of the small three-gun battery down below.

202. Do you not think, then, that it has been improperly converted into a magazine?—Yes; but not being wanted by the military, it has been hired to private parties, who have sole charge of it; though in the old time, I may mention, the commanding artillery officer had the whole of the merchants' powder under his control.

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R.A.

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R.A. •
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203. To what authority in England does it belong to give the necessary directions for the removal of the powder?—I do not exactly know; you would have to go from one office to another. The matter would probably first have to be submitted to the General, the Duke of Cambridge; then it would have to go to the Secretary of State for War; and then the Lords of the Treasury, probably, would want to know what is to be done with the magazines, whether they are to be sold, and so on; so that there are a great number of considerations which have to be got over.

204. Mr. *de Roubaix*.] I understand you to say, Colonel Freese, that you are expecting double the quantity of powder at present in store?—Yes; I am waiting for two hundred and twenty-five rounds per gun to make up the quantity.

205. Then, if your magazines are already full, how would you manage for additional storage?—That is a point that must be settled afterwards. I proposed to make the Castle a main *depôt*, like the Tower of London. That would be worse again as regards an explosion.

206. *Chairman*.] Is the Tower of London used as a *depôt*?—Yes; if I am not mistaken, a large quantity is kept there.

207. We have it in evidence, I believe, that the Tower is not so used?—I know that under the White Tower there is a large magazine.

208. Could not you suggest a spot on which to erect new magazines, if necessary?—That is a question which would take me on my horse to look about, for I am not acquainted with the town sufficiently. There would be a great number of difficulties in the way. For instance, I may come upon private lands which must be paid for, and the owner may see me looking about, as an owner did the other day when it was proposed to cut away a portion of flag-staff. There was a piece of ground there which, I believe, was to be sold for £200; but when the owner saw the engineer, he raised it to £2,000. By an Act of Parliament, however, we may fix our own price according to the opinion of a certain committee appointed for the purpose; and, in a case like that I have mentioned, if £2,000 were wanted, the committee would perhaps give £400, taking everything into consideration, which would make a great difference to the Government: in fact, they would sit as a sort of jury upon the matter. But the question of land is only one of many difficulties.

Tuesday, 15th July, 1862.

PRESENT :

Mr. DE WET (Chairman),
Mr. Wicht, | Mr. de Roubaix.

Captain *Tilly*, R.E., examined.

209. *Chairman.*] I believe you are the commanding engineer officer?—For the Western district. Captain *Tilly*,
R.E.

210. You are acquainted with the powder magazines within the municipalities of Cape Town and Green Point? 15th July, 1862.
—I am.

211. And what is your opinion as to their suitability for the purpose?—There are two magazines, the east and the west, the latter being called the Groote Mouille; they are very fair magazines, very strongly built, and at the time of their construction I have no doubt they were bomb-proof.

212. But you will not undertake to say they are bomb-proof at present?—Not in the present state of armaments.

213. Are you aware what quantity of powder is at present stored in these magazines?—The Mouille is constructed to contain 1,460 barrels of gunpowder.

214. Do you not think it is very dangerous to have such a quantity stored in a place close to the town?—No; not considering what magazines are. Magazines are necessarily very objectionable buildings, which must, however, be constructed. They must be built close to the fortifications they have to supply, and every precaution against accidents is taken in their construction. In opening them, also, for ventilation, or for storing or taking out powder, every care is exercised, enforced by the most stringent regulations, to insure safety.

215. I observe from a return submitted to the Council that quantities to the amount of nearly 300,000 lbs. are stored in the different magazines: do you not consider this an enormous quantity to be stored in a place not strictly called a fortified town, such, for instance, as Mayence or Strasburg?—Very true; but some of this powder is intended for other places. It is rather a large quantity for an open town, with only coast batteries defending it, but the Imperial Government makes this place, I believe, in some measure a

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depôt for Natal. Yet in time of war, and supposing this place to be beleaguered and cut off from communication with England, it is not too much powder for the defence.

216. But in the event of a bombardment unfortunately taking place, would not the the town be in immediate danger?—Of course; war alters everything,—all conditions of life. The town would be in great danger of bombardment from an enemy, not only on account of the magazines but from the firing on the town itself.

217. May not the explosion of the magazines effect such destruction as to be the greatest possible calamity?—Of course it would be destructive; no doubt about that.

218. What, according to your opinion, would be the effect to the town, supposing a magazine were to blow up by some accident?—In the explosion of magazines the direction in which the full force of the explosive element is directed is uncertain. It depends sometimes on the course of the wind, and of course a good deal depends on the position of the magazines.

219. But under the most unfavourable circumstances, what would be the effect?—Under the most unfavourable circumstances, with the wind blowing towards the town, it would destroy property in the neighbourhood.

220. Do you not think that the whole town would suffer?—Hardly. I am supposing that one magazine only explodes. It might perhaps be felt in the distant parts of the town also; but it is really difficult to say, because, as I have mentioned, the direction of the explosive force would be most uncertain. It is not like a mine, confined within a certain space, and where the effects are guided by the engineer.

221. Is there no rule to go upon, then, as to the distance where the effect would be felt?—None.

222. You are aware that some years ago an explosion took place at Mayence?—I heard of the explosion of a magazine in a continental town, when the hair of the sentry turned grey, he himself being saved.

223. What quantity of gunpowder was stored in that magazine?—I could not say; I only saw the fact of the explosion stated in a newspaper. But the quantity here is not large for a store magazine.

224. In the event of your opinion being asked as to the most eligible spot to erect a magazine, not to serve the batteries but as a dépôt magazine, would you select any of

these spots where the powder is now stored?—I should. I think they are very well chosen, and were very well built by the Dutch.

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225. Consulting safety also?—That is only one of the elements to be taken into consideration; there are several others to be calculated upon. For instance, one is to supply the batteries, and that is the main object of the magazine.

226. But I understood you to say that the present quantity is kept here in order to provide against emergency on the frontier and at Natal?—I do not know about the frontier, but for Natal, I believe, there is powder in store. Natal is a young country and has not yet, I suppose, store magazines of its own.

227. Have you any idea what a magazine would cost, in the event the Home Government should desire to have one erected at some distance from town—say three or four miles?—That would depend upon the size.

228. One of the largest capacity; say containing 300,000 or 400,000 lbs.?—That would be a very large magazine. It would not be erected in one, probably, for safety's sake, but rather in two buildings. Its cost, I suppose, would be between £8,000 and £9,000.

229. Do you not think the ground and buildings now in use,—I mean of the magazine close to the market and the Mouille,—to be of some value?—Of great value, I should think.

230. In the event these were sold to the highest bidder, would not their proceeds, in your opinion, to a great extent cover the expense of building a new magazine?—It is difficult to say. It would perhaps go a great way towards it.

231. The localities are very eligible, are they not?—Very. But the proposal would never be adopted. At all events, if you sold these sites you must get others in the neighbourhood, for to build magazines three or four miles off would be absurd.

232. But then, may not the quantity of gunpowder be diminished by having it placed in different small magazines, so that in the event of accident the effect would not be so calamitous?—There are already small magazines attached to each battery, called expense magazines, and intended to receive the quantity required for the defence of that battery or work, as the case may be. These two magazines, the east and west, are depôt magazines; their positions were chosen on purpose

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that they might be near the fort and batteries; so that in time of war the transport of powder to the battery might be easy and short, and that thus the battery might be quickly supplied with ammunition for defence. If that is not done you might as well give up the defence. If, for instance, you build the magazine three or four miles away, you could not do it in any part within the radius of Cape Town; you would have to go outside the limits, and the first thing an enemy would do would be to take that magazine and either blow it up, or use the powder against you.

233. In answering this question, Captain Tilly, you will of course use your own discretion; but I wish to inquire from you whether the fortifications here are of such a nature that you have reason to believe that if an attack were made any effectual resistance could be offered?—Of course not as they now stand; but in the event of hostilities they would not or ought not to be allowed to remain in that state.

234. Mr. *Wicht.*] Would an iron-clad steamer not be better for our defence than a battery?—It would be a great advantage for your defence, but it should act in conjunction with your shore-battery, to make the place still more difficult of capture. I see that the Defence Commission have given in their opinion, with reference to the forts at Spithead, that there should be a combined system of forts and iron-clad ships.

235. *Chairman.*] Does not the length of time the powder is stored in these magazines show that it is not so urgently wanted in large quantities?—You must always be prepared for war. In the event of hostilities, and with a small stock of powder, you could not obtain any from England in sufficient time to guard against an enemy's attack; they would be upon you before you could get any powder.

236. Mr. *Wicht.*] Could not a spot be found under the crest of the hills or mountains round about Cape Town where a magazine would be safely under cover?—It would not be nearly so convenient as at present, for it would be high up, and exposed to an enemy's fire; and at present the vertical fire from large guns is very accurate. Where Mouille magazine stands now is an admirable spot, considering all the circumstances of the case. There is the Hangman's Hill between it and the sea, masking the magazine from the bay. That is a great object; if you can only mask a magazine, even if the enemy fire upon it, he may miss his mark.

237. *Chairman.*] But is not the magazine in Fort Amsterdam opened on the flank, in consequence of the Breakwater works having rendered it necessary to do away with the Chavonne?—I think matters remain much the same as they were before, another battery having been established at Kyk in de Pot to take the place of the Chavonne.

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238. Now, for instance, could not there be erected behind that battery, if it is to remain permanent, a powder magazine, so that the quantity might be divided in small portions?—It might be; but there is a laboratory there now for mixing powder and making charges for the guns, which is obliged to be done in a building that is far away, if possible, from other houses.

239. In the event of a fire breaking out in any of the shipwright yards close to the Amsterdam, especially during the summer season, when the south-easter is prevalent, would not the magazines be in immediate danger?—They would be rather in danger; but if you had a fire-engine playing upon them it would prevent the possibility of sparks catching, and it is only from sparks that danger would have to be apprehended.

240. But the batteries are not provided with engines?—No; but there is one in the barracks.

241. So that it would have to come out all that way?—Yes; but the magazine is covered with masonry, and the wood-work wherever exposed is coated with copper.

242. You are aware that some of the casemates in the Amsterdam have been converted into magazines?—Yes.

243. Are they in a perfect state?—They have been fitted up with magazine copper fittings, &c., to prevent accidents from explosion; and in time of peace will answer very well.

244. But in time of war?—They should no longer be used as magazines.

245. *Mr. Wicht.*] Extensive works are going on in the neighbourhood, and as soon as the docks are completed do you not think these magazines will be in dangerous proximity; shipping will be lying about there, people will pass smoking, there will be constant communication, and, besides this, the encroachments of houses will increase considerably?—The houses cannot close within a certain radius, for each fort and magazine has a certain *rayon* in its title deeds to prevent encroachment. As to mere smoking on the part of the people, that can do no harm. As I said before, such precautions are taken in

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building these magazines—with double doors, double shutters, copper lined, masonry six and eight feet thick, the arch three feet thick—that really, unless by the act of an incendiary, there is hardly any possibility of their exploding.

246. Are the magazines not opened to receive powder?—In that case all fires are put out by military regulations; the storekeeper is bound to take that precaution.

247. But suppose a ship should run into the dock and land powder for the magazines, would there not be danger?—There would be a guard; no one would be allowed to cross the line of communication.

248. *Chairman.*] Do not you think that whenever the Castle, or any other part of the fortification has to be supplied with powder from these magazines at Green Point, it is most desirable to have the powder carried across the bay, instead of being carried through the town?—It would be safer, but there are plenty of people smoking even on the wharfs.

249. Are the blacksmiths' shops closed when the powder passes?—The Government cannot order blacksmiths to put out their fires, but in military buildings they do. There would, however, be less risk by water carriage, certainly.

250. You are not acquainted with the manner in which they store merchants' gunpowder in the private magazine at Craig's Tower?—No, I have not seen their method.

251. The military officer, then, has no authority there?—None; it is quite a private matter.

252. And he cannot interfere when he sees anything wrong?—Not under present regulations.

253. *Mr. Wicht.*] You do not think it expedient, then, that a powder magazine should be built in the flats, say three or four miles away, in order to divide the large quantity of powder which is at present kept in one locality?—As I said, the first thing an enemy would do would be to take it and blow it up.

254. Could you not cover it with batteries?—Then you must have another garrison and works of defence, and thereby weaken the garrison of Cape Town. I think the sites of the present magazines very well chosen.

Mr. Siems examined.

Mr. Siems.

255. *Chairman.*] I believe you are in charge of the gunpowder magazine at Craig's Tower?—Yes.

256. When were you appointed?—I have been there since the 27th of November last; since the death of Mr. Jansen. Mr. Siems.
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257. By whom were you appointed?—By the shareholders.

258. And had you to pass an examination before your appointment as to your knowledge and fitness for the situation?—I had been in the magazine before, in 1845. There were seventy applications for the vacant post, and out of the seventy I was selected.

259. Then they merely looked into the applications and made the appointment?—They looked also at the persons sending in the applications, and picked me out.

260. Did they not ask you whether you knew anything about powder magazines and the storage of powder?—They have known me for a long while, because I was in their service before.

261. Did you ever serve in an artillery or engineer corps?—No.

262. So that you have no other idea than that powder is a very dangerous article?—Yes, it is very dangerous.

263. Do you know how it ought to be treated?—Oh, yes.

264. Can you tell us?—I am always very careful, and no accident has ever happened since I have been there.

265. And what do you mean by careful?—Not to handle powder like a piece of wood or stone. If I pick up a cask I place it nicely, as it ought to be placed, not on sand or stony ground.

266. What are the precautions you take in entering the magazine?—I have my water and my broom; I open the door, and I throw water and sweep it, and I put on a pair of carpet slippers, so that I can walk anywhere about the magazine without danger.

267. Do you not empty your pockets?—I have a light dress, such as is usually worn in a magazine.

268. With buttons?—Horn buttons.

269. Is there any iron or steel about it?—No.

270. Who was your predecessor?—Mr. Jansen.

271. What became of him?—He hanged himself.

272. Do you know where?—To one of the cross beams in the magazine.

273. There was nobody with him at the time?—No.

274. Then since he was determined to destroy himself, he might as well, if he had chosen, have set fire to the magazine, and made short business of it?—Yes.

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275. And nobody could have prevented him?—No.

276. You have no person who assists you at the magazine?
—No, I am there alone.

277. And you do as you please?—If a man comes to me for powder, I go and fetch it, and hand it over to him; or if a wagon comes with a couple of thousand pounds, and coolies come with it to load off the powder, I look how they are dressed, and if they are properly dressed, I allow them to help me to take off the barrels and bring them into the magazine.

278. There is no opportunity, then, for anybody entering the magazine with you?—I should not allow any one to go in with me except on business; as, for instance, if a clerk came to see about the powder.

279. But if you were to go in, and somebody were to follow you?—I would ask him, "What do you want?" and if he had no business, I would say, "Walk off."

280. But suppose two or three were to come and overpower you, they might enter the magazine?—Oh, yes, and carry away what they liked. I may state that the magazine is by itself in the night time; there is no watch, no guard, nor anything. There are 160,699lbs of gunpowder in the magazine to-day.

281. Are you aware whether attempts have ever been made to steal powder from the magazine?—I cannot say.

282. But parties might do so at night if they wished?—Yes, it is easy to break in.

283. Persons might even break through the wall, expecting to find something valuable?—No, they cannot break through the wall, it is too thick,—four feet; but through the doors they might break, for they are not so well made. Nothing prevents them doing that, especially in the winter time, when they might enter and do what they liked, and bring about an accident by which people's lives might be lost.

284. The magazine stands in an isolated spot?—Yes.

285. Tell us how you do when the powder comes into your hands?—If a ship arrives with powder, for instance, Mr. Clements, or one of the other shareholders, writes to me an order: "Please receive such and such a quantity, so many barrels, so many boxes, marked so-and-so." Then the boat comes and unloads the powder.

286. Where?—Sometimes on the sea-beach, and sometimes on the wharf. The other day I received 25,000 lbs.

landed on the wharf, when the sea was too rough to land on the beach near Craig's Tower. They then bring the powder round by the Castle, but there is no protection to the wagons; they are only covered with a tarpaulin.

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287. And the wagons have iron fastenings in several places, have they not?—Yes.

288. And are not provided with any guard or constable?—No.

289. And they do not call upon persons who have smiths' shops to put out the fire when they are passing?—I do not think there are any smiths' shops in that direction.

290. You cannot prevent any person smoking?—If I were close I would prevent it. I would keep them off the wagon, telling them that the powder is dangerous, and that they must not smoke there; and if they did not listen to me I would hand them over to the police.

291. But where are the police?—That is just the question. I think it would be a good thing if there were a guard

292. There is no military guard escorting these wagons?—No; when the wagons come to the door they unload it.

293. Who?—The coolies.

294. And the coolies are dressed in their usual way?—Yes.

295. You cannot prevent their having iron and steel buttons, perhaps?—No.

296. Do you examine them whether they have anything in their pockets which could ignite?—When they come into the magazine I examine them, but not by the door. I see whether they have any tobacco pipes, and so on. They are all barefooted. Then they put down the casks where I tell them. In some casks there are canisters, and in others 5lb. bags. Some powder again is in flasks and tins, rolled in paper.

297. Has there never been any powder spilled?—Sometimes there is, when the coolies are careless in handling the cask, but if it happens that the bottom of the cask falls in, for instance, I soon put it to right again, because I have the tools for doing so. It has sometimes happened, too, that powder has fallen out in the wagon, on account of the carelessness of the coolies.

298. Is there only one door to the magazine?—Yes, and one window.

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299. And is that window opened?—It is a double-storied building, and if we are required to go upstairs to put the powder, and want light, I open the window.

300. But sometimes do not you leave that window open?—No, as soon as the work is done I close it. The window is wood, four inches thick.

301. Is it not covered inside and outside with copper?—Yes; formerly there was iron, but they have lately made a new floor also with copper fittings.

302. The building is not a magazine properly speaking, is it?—No.

303. In what way do you deliver the powder?—On receiving an order from the magistrate and from one of the shareholders.

304. In what quantities?—The least is 25 lbs., and when the merchants re-ship, sometimes 1,000 or 500 lbs., and so on.

305. Can you recollect the greatest quantity you ever sent off in one load?—Thirty half barrels, about 1,500 lbs. Sometimes we have two wagons, according to the quantity required.

306. And these go following each other without any guard?—Yes.

307. Even in passing through the town?—Yes; they must go through the town to the wharf.

308. You cannot prevent all the people smoking about on the jetty while the powder is being shipped and re-shipped?—I do not go to the wharf; I stay at the magazine; I have nothing to do at the wharf; I leave it to the custom-house people.

309. Then you do not trouble your head as to what way it is shipped?—No.

310. And you are not aware who takes proper care?—No; I only deliver it to the person who orders it.

311. Do you take proper precaution in preparing the wagons when you send powder away?—Yes; I put bags on the floor of the wagon, pack the powder in it nicely, and put a tarpaulin over it. When powder is sent by the rail, also, we take proper precaution.

312. Where do you live?—I have to move to-morrow to Papendorp, having received an order from Mr. Clements to stay out there. I will then live about 600 yards from the magazine, opposite the new English church at Papendorp.

313. Who keeps the keys?—I. Day and night they are always under my protection. Mr. Siems.

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314. Locked up?—Yes, in my press.

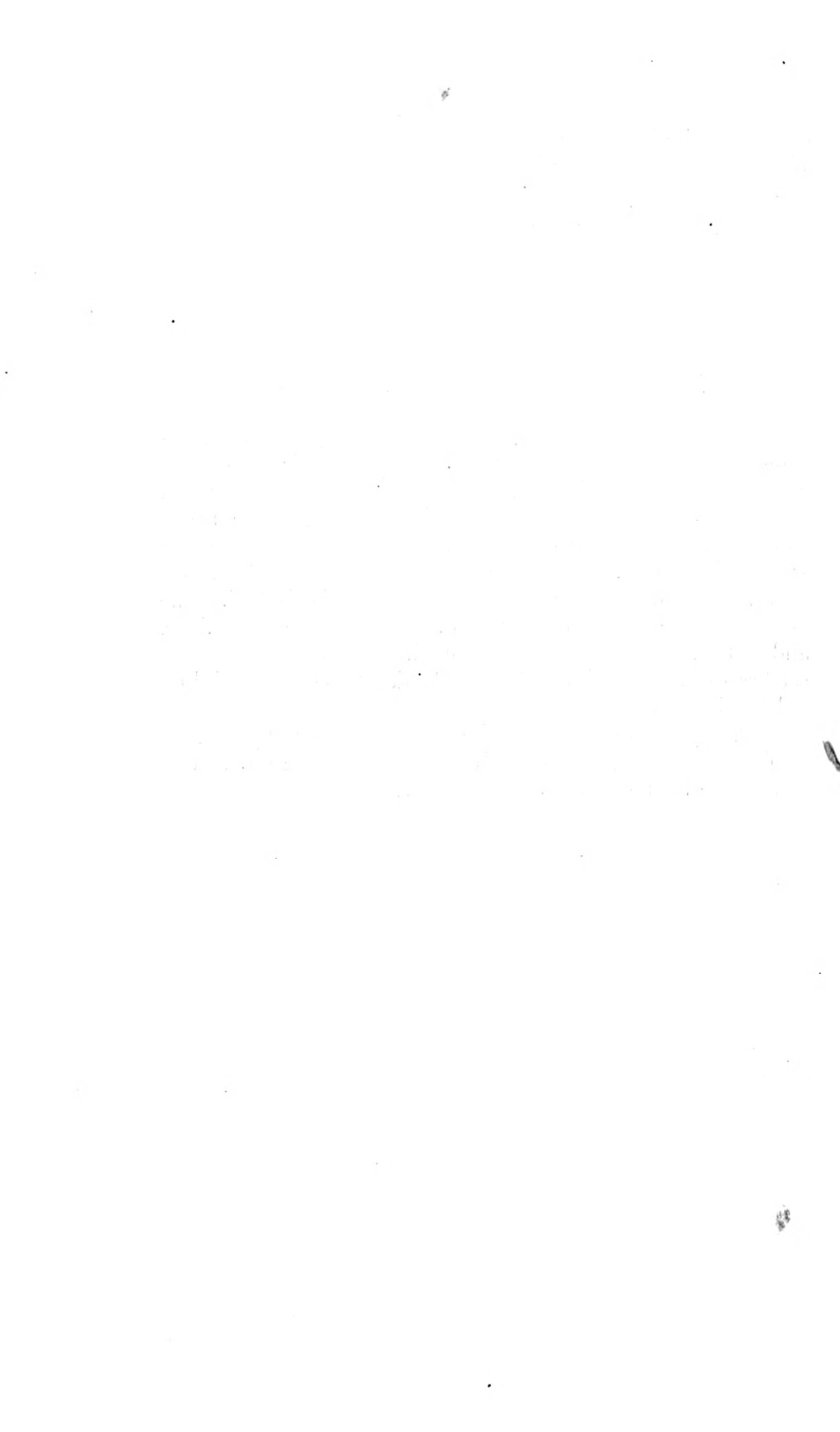
315. What is your salary?—Only £5 a month; and I have to look after the powder of twenty merchants, keep a book, and bring a return to the magistrate every month.

316. You are not under the orders of the military?—No.

317. So that upon an order of the person to whom the powder belongs you deliver to whomsoever he appoints to receive it?—Yes, if he also brings an order from the magistrate.

318. Do you not think it would be far better if the magazine were placed at a greater distance?—It is rather too small now, and is quite full. The place is so far good; but it might be removed if necessary a little further to the negro buildings. There is a wooden building just close by, which is very dangerous. An old man, his wife, and children live there. The building is as dry as a cork, and is pitched. The people make a fire in the centre of the building on the floor, and if they do not take care what they are about, they may set fire to the magazine. I should like to see the building sold or broken up.

319. How far is it from the magazine?—200 yards. I don't know how people can live in it; it has an open roof. It is the property of the civil engineer.



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